

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

Claim 1 (Currently Amended): A method of fabricating a semiconductor device comprising:

providing a semiconductor wafer having a substrate with a first surface and a second surface opposite of the first surface, the first surface having a plurality of circuit elements each of which is defined by scribe lines formed in the substrate semiconductor wafer;

forming a sealing resin on the first surface of the substrate semiconductor wafer;
forming a plurality of external terminals on the first surface of the substrate semiconductor wafer, wherein the external terminals respectively electrically connect to the circuit elements and project from the sealing resin;

forming a heat spreading material on the second surface of the substrate semiconductor wafer, after said forming the sealing resin; and

separating the semiconductor wafer by cutting the substrate at the scribe lines after the heat spreading material is formed on the second surface of the substrate semiconductor wafer.

Claim 2 (Currently Amended): The method according to the claim 1, further comprising polishing the second surface of the substrate semiconductor wafer before said forming the heat spreading material.

Claim 3 (Currently Amended): The method according to the claim 1, further comprising forming a heat conductor on the second surface of the substrate semiconductor wafer, before said forming the heat spreading material.

Claim 4 (Withdrawn – Currently Amended): The method according to the claim 1, wherein said separating includes removing the heat spreading material from the scribe lines and then cutting the substrate semiconductor wafer.

Claim 5 (Withdrawn – Currently Amended): The method according to the claim 4, wherein the heat spreading material on the scribe lines is removed using a first blade, and the substrate semiconductor wafer is cut using a second blade, wherein a speed of rotation of the first blade is slower than a speed of rotation of the second blade, a width of the first blade is wider than a width of the second blade, and a density of diamonds embedded in the first blade is higher than a density of diamonds embedded in the second blade.

Claim 6 (Previously Presented): A method of fabricating a semiconductor device

comprising:

providing a semiconductor wafer having a first surface and a second surface opposite of the first surface, the first surface having a plurality of circuit elements each of which is defined by scribe lines formed in the semiconductor wafer;

forming a sealing resin on the first surface of the semiconductor wafer;

forming a plurality of external terminals on the first surface of the semiconductor wafer, wherein the external terminals respectively electrically connect to the circuit elements and project from the sealing resin;

selectively forming a heat spreading material on the second surface of the semiconductor wafer, after said forming the sealing resin, wherein the scribe lines are exposed from the heat spreading material; and

separating the semiconductor wafer at the scribe lines after the heat spreading material is formed on the second surface of the semiconductor wafer.

Claim 7 (Withdrawn): The method according to the claim 6, wherein said selectively forming the heat spreading material includes forming a first mask that covers the scribe lines, and then forming the heat spreading material on the second surface using the first mask.

Claim 8 (Withdrawn): The method according to the claim 7, wherein the first mask is removed after forming the heat spreading material.

Claim 9 (Withdrawn): The method according to the claim 8, further comprising forming a second mask on the scribe lines after forming the first mask, wherein the second mask is removed before removing the first mask.

Claim 10 (Withdrawn): The method according to claim 9, wherein the first mask is a photoresist material and the second mask is a metal mask.

Claim 11 (Withdrawn): The method according to the claim 8, further comprising forming a second mask on the peripheral area of the semiconductor wafer after forming the first mask, wherein the second mask is removed before removing the first mask.

Claim 12 (Withdrawn): The method according to the claim 11, wherein the first mask is a photoresist material and the second mask is a metal mask.

Claims 13-18 (Canceled)

Claim 19 (Previously Presented): The method according to claim 1, wherein a thickness of the heat spreading material ranges from 5 μm to 200 μm .

Claim 20 (Previously Presented): The method according to claim 1, wherein the heat

spreading material includes ceramic powder.

Claim 21 (Previously Presented): The method according to claim 1, wherein the heat spreading material is supplied on the second surface by spray coating.

Claim 22 (Previously Presented): The method according to claim 1, wherein the heat spreading material is supplied on the second surface by printing.

Claim 23 (Previously Presented): The method according to claim 1, wherein said forming the heat spreading material includes supplying liquid type heat spreading material on the second surface and solidifying the liquid type heat spreading material.

Claim 24 (Previously Presented): The method according to claim 6, wherein a thickness of the heat spreading material ranges from 5 μm to 200 μm .

Claim 25 (Previously Presented): The method according to claim 6, wherein the heat spreading material includes ceramic powder.

Claim 26 (Previously Presented): The method according to claim 6, wherein the heat spreading material is supplied on the second surface by spray coating.

Claim 27 (Previously Presented): The method according to claim 6, wherein the heat spreading material is supplied on the second surface by printing.

Claim 28 (Previously Presented): The method according to claim 6, wherein said forming the heat spreading material includes supplying liquid type heat spreading material on the second surface and solidifying the liquid type heat spreading material.

Claim 29 (Currently Amended): A method of fabricating a semiconductor device comprising:

providing a semiconductor wafer having a substrate with a first surface and a second surface opposite of the first surface, the first surface having a plurality of circuit elements each of which is defined by scribe lines formed in the substrate semiconductor wafer;

forming a sealing resin on the first surface of the substrate semiconductor wafer;
forming a plurality of external terminals on the first surface of the substrate semiconductor wafer, wherein the external terminals respectively electrically connect to the circuit elements and project from the sealing resin;

forming a material film that covers the second surface of the substrate semiconductor wafer, the material film having a heat radiating ratio that is greater than a heat radiating ratio of the substrate semiconductor wafer; and

separating the semiconductor wafer by cutting the substrate at the scribe lines

after the ~~heat spreading~~ material film is formed on the second surface of the substrate semiconductor wafer.

Claim 30 (Previously Presented): The method according to claim 29, wherein the material film includes ceramic powder.

Claim 31 (Currently Amended): The method according to claim 29, further comprising forming a heat conduction film on the second surface of the substrate semiconductor wafer, before said forming the material film, so that the material film is formed on the heat conduction film.

Claim 32 (Previously Presented): The method according to claim 31, wherein the heat conduction film is a metal.